

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Confirmation No. 5291**  
Mie TAKAHASHI et al. : Attorney Docket No. 2001\_1464A  
Serial No. 09/937,730 : Group Art Unit 1641  
Filed January 8, 2002 : Examiner Gary W. Counts  
  
CHROMATOGRAPHY MEDIUM AND  
ITS MANUFACTURING METHOD : **Mail Stop: AF**

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**RESPONSE AFTER FINAL REJECTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action of April 22, 2008, Applicants submit the following remarks in support of the patentability of the presently claimed invention over the disclosures of the references relied upon by the Examiner in rejecting the claims. Further and favorable reconsideration is respectfully requested in view of these remarks.

**Considering After Final Rejection**

Although these arguments are presented after final rejection, the Examiner is respectfully requested to consider the remarks, as they place the application in condition for allowance.

**Rejections Under 35 U.S.C. § 103(a)**

The rejection of claims 5, 12, 27, 31, 41, 45, 53 and 60 under 35 U.S.C. § 103(a) as being unpatentable over Chu (U.S. 6,284,194) in view of Nanbu et al. (U.S. 6,130,055) or Uenoyama et al. (U.S. 5,856,117), as well as the rejection of claim 49 under 35 U.S.C. § 103(a) as being unpatentable over Chu in view of Nanbu et al. or Uoneyama et al. and further in view of Iwata et al. (U.S. 5,912,139), are respectfully traversed.

The Examiner's positions regarding these combinations of references are of record in the application, and are identical to those set forth in the previous Office Action (December 10, 2007).

The Examiner states that Applicants' arguments have been considered, but are not found to be persuasive.

Regarding Applicants' argument that "polyoxyethylene sorbitan monolaurate is a slightly yellow liquid surface active agent at normal temperature and normal pressure, and polyoxyethylene sorbitan monooleate is also a slightly yellow liquid surface active agent at normal temperature and normal pressure", the Examiner asks: "Does the color not provide for drying or solidification? Does the color affect the device?"

However, Applicants respectfully assert that the essence of this argument, to which the Examiner refers, was not related to the color. The discussion relating to color was merely mentioned for completeness. The purpose of this argument (as set forth on pages 2 and 3 of the Response filed March 10, 2008) was to demonstrate that the surfactants of Chu are in liquid form at normal temperature and normal pressure. Accordingly, the Examiner's inquiries regarding color are irrelevant.

Further, the Examiner states that Applicants argument did not mention sucrose monolaurate or n-octyl-B-D-thioglucoside, which are surface active agents of the present invention. Applicants acknowledge that these particular surfactants were not discussed in relation to the above argument, because the comments discussed regarding polyoxyethylene sorbitan monolaurate and polyoxyethylene sorbitan monooleate do not apply to sucrose monolaurate or n-octyl-B-D-thioglucoside. The purpose of this line of argument, as set forth in the prior response, was to demonstrate the distinctions between the surfactants of the present invention, and the surfactants of Chu, i.e. to demonstrate that surfactants cannot be considered equivalent, merely because they belong to the large group of compounds called surfactants.

However, Applicants also provide the following additional comments, which include discussion of sucrose monolaurate and n-octyl-B-D-thioglucoside. The melting point of

polyoxyethylene sorbitan monooleate is  $-25^{\circ}\text{C}$ . Since the melting point is  $-25^{\circ}\text{C}$ , this material is in liquid form at normal temperature and normal pressure. Similarly, the melting point of polyoxyethylene sorbitan monolaurate is  $-14^{\circ}\text{C}$ , and thus, polyoxyethylene sorbitan monolaurate is also in liquid form at normal temperature and normal pressure. Incidentally, the boiling point of the both of these materials is above  $100^{\circ}\text{C}$ . This information can be confirmed by the MSDS (Material Safety Data Sheets) for these compounds.

On the contrary, the melting point of sucrose monolaurate is  $150^{\circ}\text{C}$ , and thus, this material is in solid form at normal temperature and normal pressure. Similarly, the melting point of n-octyl-B-D-thioglucoside, which is also known as n-octyl-B-D-thioglucopyranoside, is  $127^{\circ}\text{C}$ . Thus, n-octyl-B-D-thioglucoside is also in solid form at normal temperature and normal pressure.

As stated above, the essence of the previously asserted arguments was to demonstrate the distinctions between the properties of the respective materials, i.e. between the surfactants of Chu and the surfactants of Nanbu et al. and Uenoyama et al. Applicants believe that the difference in the properties of the surfactants may cause the distinction in the meaning of drying process (as discussed in detail on pages 2 and 3 of the prior response).

In a process of preparing a water solution of the surface active agent, and evaporating the water in the drying process, polyoxyethylene sorbitan monooleate or polyoxyethylene sorbitan monolaurate (Chu) would leave liquid surface active agent on the test specimen, while sucrose monolaurate or n-octyl-B-D-thioglucoside (Nanbu et al., Uenoyama et al.) would leave solid surface active agent on the test specimen. It is the properties of the particular surfactant which cause this distinction.

Thus, contrary to the Examiner's position that the surfactants of Chu and those of Nanbu et al. and Uenoyama et al. are equivalent, it is clear that polyoxyethylene sorbitan monooleate or polyoxyethylene sorbitan monolaurate (Chu) and sucrose monolaurate (Nanbu et al.) or n-octyl-B-D-thioglucoside (Uenoyama et al.) have distinct properties, resulting in very different materials after drying.

Further, Applicants previously argued that Chu does not suggest the step of drying (evaporating) the surface active agent (polyoxyethylene sorbitan monooleate or polyoxyethylene sorbitan monolaurate) itself. This is because if the drying step taught by Chu means such a drying process, neither material would remain after drying. (As discussed above, since the surface active agents of Chu are liquid at normal temperature and normal pressure, evaporating the surfactant would leave no surface active agent on the test specimen.)

Thus, even though the drying process of Chu may be the same as in the present invention, Chu teaches surface active agents which are in liquid form at normal temperature and normal pressure, and Chu teaches that liquid remains after the drying process. Thus, it cannot be said that the surfactant is dried (evaporated) in Chu, because that would result in no surface active agent being left on the test specimen. Accordingly, the drying process of Chu must correspond to option (2) (set forth on page 2 of Applicants' response of March 10, 2008), i.e. evaporating the surrounding water without drying the surface active agent. Thus, the surface active agent remains on the test specimen in liquid form (because it is in liquid form at normal temperature and pressure), which causes a decline in long-term preservation stability. Thus, the teachings of Chu differ from Applicants' invention.

Further, Applicants previously argued that Chu, Nanbu et al., and Uenoyama et al. fail to teach the preservation stability. The Examiner stated that this cannot be the basis for patentability, because this is another advantage which can be naturally deduced from suggestions by the prior art. However, Applicants respectfully disagree with the Examiner's position. First, it cannot be said that this advantage flows naturally from the prior art, when the Examiner has based the rejection on a combination of references, one of which does not teach Applicants' recited surfactant (Chu), and the other two (Nanbu et al., Uenoyama et al.) which teach surface active agents both within and outside Applicants' recited surface active agents. The natural teachings of the cited references teach away from Applicants' claimed invention, because they do not recognize the importance of the particular surface active agent to be employed. Additionally,

preservation stability is an important technical object for those skilled in the art, as indicated by the references submitted with Applicants' prior response.

As discussed above, the surface active agents of Chu and Applicants' recited surface active agents are quite different in their property, and therefore their construction elements are quite different. Thus, since neither Chu, Nanbu et al. nor Uenoyama et al. teach or suggest preservation stability at all, it is extremely appropriate for the Examiner to have an understanding of the previously submitted references, which clearly demonstrate that properties among surfactants may not be assumed, and thus ability to improve preservation stability may also not be assumed.

Applicants understand that the Examiner only relies upon Nanbu et al. and Uenoyama et al. for the teachings of surface active agents. However, as discussed in detail in the response filed November 6, 2007, Nanbu et al. and Uenoyama et al. have no common point with the present invention, other than surface active agent. Thus, it is natural that neither of these references would discuss preservation stability. Nanbu et al. and Uenoyama et al. merely recite large groups of surfactants, some of which fall within Applicants' recited surface active agents, and many of which do not. Thus, these secondary references cannot be seen as directing one of skill in the art to employ the particular surface active agents, recited in Applicants' claims, which result in the advantages discussed previously.

Applicants again urge that the Examiner's position is untenable. One skilled in the art would not conceive Applicants' claimed invention, on the basis of prior art which only share one commonality with the present invention, i.e. the surface active agent found within a laundry list of surface active agents. Applicants assert that if the above arguments based on the objective facts and the comparison of the respective constitutional elements cannot be accepted in the examination of inventions, this would result in a situation where even if an innovation is generated by an invention, inventors may not be afforded with patent protection, unless completely new elements are discovered. Applicants assert that this position is contrary to patent law.

For these reasons, the invention of claims 5, 12, 29, 31, 41, 45, 53 and 60 is clearly patentable over Chu, Nanbu et al., Uenoyama et al., and Iwata.

**Conclusion**

Therefore, in view of the foregoing, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Response, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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